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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/590,436	06/09/2000	Jason Wayne Riddering	SEA 9168	1997

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EXAMINER

MILLER, BRIAN E

ART UNIT PAPER NUMBER

2652

DATE MAILED: 06/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/590,436

Applicant(s)

RIDDERING ET AL.

Examiner

Brian E. Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____.

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Claims 1-33 are pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (AAPA), Figs. 1-16 in view of Suzuki (JP 10-069747).

The AAPA discloses a head suspension 164 (FIGs. 6-7) including a gimbal portion 176; head assembly 112, which assembly is mounted to an actuator assembly 122 (FIG. 1) which is part of a disk drive assembly 100 including a rotating disc 106 which includes a textured landing zone 134 (if desired) in which it is "apparent to those of skill in the art...to control the flying height of the head assembly in a manner that allows the head assembly to fly extremely close to the disc surface in the data area 130, and at a greater flying height when the head assembly is moved to the landing zone 134." (see specification page 8, lines 23-28); flying attitude is discussed in FIGs. 4-5; known bi-metal adjustment structure 212 is shown in FIGs. 11-13 and known piezo-electric adjustment element 224 is shown in FIGs. 14-16.

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It is further known in the art that maintaining constant fly height and pitch and roll characteristics across the radius of the disk is an important design characteristics in head suspension technology, the AAPA is expressly silent as to placement of the above described bi-metal or piezo-electric adjustment structures onto a gimbal structure (shown in FIG. 7) to controllably alter the flying height and/or attitude of the slider/head assembly.

JP Patent to Suzuki, however, teaches the use of a piezo-electric device 7, 8 on gimbal 5, 6 to dynamically control/adjust (with controller 11) at least the flying height of the slider (see Solution, last 3 lines). Although the exact location of the piezo-electric elements are not shown by Suzuki, one having ordinary skill in the art would have provided such at the locations required in the claims, e.g., on the gimbal beams, through routine engineering optimization and experimentation, depending on the particular adjustment desired. Suzuki teaches the importance of maintaining and adjusting the fly height of the head assembly and thus applicants' claimed invention in view of the AAPA.


Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure including: US Patents to Blessom et al (4,374,402) and Koshikawa et al (6,181,531), JP Patent Applications to Kawazoe (7-296537) and to Kawasaki (5-347078) which teach the use of a piezo-electric device to control fly height/attitude.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian E. Miller whose telephone number is (703) 308-2850. The examiner can normally be reached on M-F 8am-5:30pm (FF off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.



Brian E. Miller
Primary Examiner
Art Unit 2652

bem
June 14, 2002